(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 24 February 2005 (24.02.2005)

PCT

(10) International Publication Number WO 2005/016414 A2

(51) International Patent Classification7:

A61M

(21) International Application Number:

PCT/US2004/026509

(22) International Filing Date: 13 August 2004 (13.08.2004)

(25) Filing Language:

(26) Publication Language:

English

(30) Priority Data: 60/494,886

13 August 2003 (13.08.2003) US

(71) Applicant (for all designated States except US): THE CHILDREN'S HOSPITAL OF PHILADELPHIA [US/US]; 34th Street and Civic Center Boulevard, Philadelphia, PA 19104 (US).

(72) Inventors; and

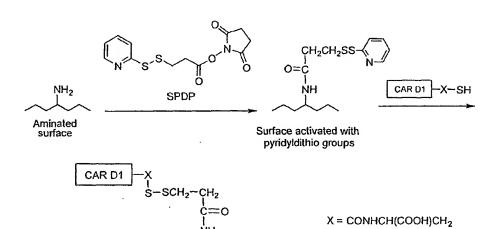
(75) Inventors/Applicants (for US only): FISHBEIN, Ilia [IL/US]; 450 Byberry Road, #T-21, Philadelphia, PA 19116 (US). ALFERIEV, Ivan [RU/US]; 1341 Blackwood Clementon Road, #963, Clementon, NJ 08021 (US). LEVY, Robert, J. [US/US]; 440 Merion Road,

Merion Station, PA 19066 (US). NYANGUILE, Origene [CH/BE]; 26A Avenue du Grand Forestier, B-1160 Auderghem (BE).

- (74) Agent: HANDLER, Melissa; CAESAR, RIVISE, BERN-STEIN, COHEN & POKOTILOW, LTD., Seven Penn Center, 1635 Market Street, 11th Floor, Philadelphia, PA 19103
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: USE OF RECEPTOR SEQUENCES FOR IMMOBILIZING GENE VECTORS ON SURFACES



Immobilized CAR D1

(57) Abstract: The present invention relates to compositions and methods of immobilizing a viral vector to an implantable medical device, for example a vascular stent. Specifically, a composition for delivery of a therapeutic agent is provided which includes: a gene transfer vector, a surface and a modified protein, wherein the gene transfer vector is bound to the modified protein and the modified protein is covalently bound to the surface and wherein the composition is adapted to deliver the gene transfer vector to a mammalian cell. The viral vector is preferably an adenoviral vector and the modified protein is preferably CAR D1.



WO 2005/016414 A2



 $FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, \quad \textbf{Published:} \\$ SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for US only

without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.